



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/924,977

08/08/2001

Hideki Masudaya

9281-4147

3139

7590

09/09/2004

Brinks Hofer Gilson & Lione  
P.O. Box 10395  
Chicago, IL 60610

EXAMINER

LIU, MING HUN

ART UNIT

PAPER NUMBER

2675

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/924,977	<b>Applicant(s)</b> MASUDAYA, HIDEKI	
	<b>Examiner</b> Ming-Hun Liu	<b>Art Unit</b> 2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,5,6 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,6 and 10-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5, 6 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,154,201 to Levin et al.

In reference to claim 1, Levin discloses a vehicle-mounted input unit provided with a manual manipulator (figure 1 and column 3 lines 17-25), position sensors (figure 3a, item 76) for supplying position signals corresponding to the direction and quantity in which the manual manipulator is driven, actuators (figure 3a, item 70) for providing an external force to the manual manipulator, and a control section for controlling the actuators (column 10, lines 2-4). The control section computes an initial width of the movable range of the manual manipulator from its current position to an end of its possible motion according to changes in position signals supplied from the position sensors, and controls the output to the actuators according to the computed initial width of the movable range (column 10, lines 8-30).

The main difference between the applicant's and Levin's invention is the definition of tactile feedback. The applicant's invention has only one possible width of movable range whereas Levin's invention includes several intersecting movable ranges which he calls detents. Levin however illustrates in figure 7A, a single detent function and describes in column 15, lines 1-5,

Art Unit: 2675

that it is an option to add additional detents to the invention. The characteristics of a detent are configured with an initial width of movable range as outlined in Column 17, lines 31-43.

Levin's invention could be modified to resemble the claimed invention by limiting the manipulator to one "detent".

It would have been obvious to one skilled in the art to modify Levin's invention for the following reasons. First, as stated above, Levin leaves room for the possibility of having only one detent, resulting in an invention identical to the claimed invention. Second, detent forces in Levin's invention are programmable and are isotonicly controlled (column 11, line 42), making it possible for designers to alter the specifics of the force feedback. Third, as described in column 11, lines 22-33, Levin refers to a position controlled manipulation device as "standard knob control paradigm" a well-known feedback feature to the input device art. Therefore, with Levin's disclosure, it would have been obvious to implement this initial width of range preparation because of its common use in the art and also because Levin teaches the case of having a single detent embodiment resulting in the claimed invention.

In reference to claim 5 is rejected on the same grounds as the rejection of claim 1, with the added disclosure of Levin that manual manipulator is used to operate electric devices (column 4, line 20).

Referring to claims 6 and 10, Levin states that the vehicle-mounted input unit allows for a plurality of tables listing correlations between changes in the position signals and the output of the actuators are stored in the control section (column 20, lines 8-13), and a switching means for the tables is provided on or in the vicinity of the manual manipulator (column 5, lines 66-67).

Art Unit: 2675

In reference to claims 11 and 12, Levin teaches an invention similar to the one being claimed however fails to disclose the exact limitations outlined by the applicant. The applicant states that the controls output to the actuators weaken the feel of the resistance when the movable range is wide and the opposite when the range is narrow. In column 10, last paragraph, specifically lines 62-64, Levin states that “a damping force sensation can also be provided on knob to slow down the rotation of the knob, allowing more accurate control by the user.” It is agreed that Levin never explicitly uses the specific standard of using ‘width of the movable range’ to determine amount of the resistance. Nonetheless in Levin’s cited disclosure, Levin essentially describes the same limitation, just without using the same terminology as the applicant. One skilled in the art understands that “slowing down the force” to gain a more accurate control of the input device, when viewed in the context of knob control devices, relates to increasing resistance when a small range of rotation is presented. Therefore, it is implied, if not suggested by Levin to increase the resistance of the control knob in situations of narrow knob range movements

In response to claims 13 and 14, on column 11, lines 60-63, Levin teaches that a jolt force is felt when the end of movable range is reached.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 5, 6 and 10-14 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6,342,880 to Rosenberg et al. – Rosenberg teaches variable resistive forces for specific functions/users/environments (column 10 lines 48-65).

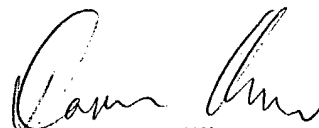
US Patent 6,563,487 to Martin et al. – Width of movement and various forces for various interfaces (column 10, lines 18-30)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ming-Hun Liu whose telephone number is 703-305-8488. The examiner can normally be reached on Mon-Fri.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ming-Hun Liu

  
DENNIS-DOON CHOW  
PRIMARY EXAMINER